

Amendment B
Application No. 10/717.857
Amendment Dated June 20, 2005
Reply to Office Action of April 18, 2005
Attorney Docket No.: 718395.55

REMARKS

All the original claims of the instant application, claims 1-22, stand rejected under 35 USC 103(a) over Rakieski ('949) in view of Grove ('342). The reasons for the rejection are the same as those presented in the first Office Action. First, a description of the teachings of the two cited references is provided.

Rakieski teaches a ball valve having a rotary element (plug) mounted in a valve body. A connection nipple 20 is screwed into the side of the body and sealed thereto by an O ring seal 43. The specific valve is a ball valve having a generally spherical valve element section 23. A flow passage 62 is provided forming a flow path between a side portion of the ball 23 and a bottom portion of the ball. A fixed position seal 48 is provided that is removably secured to the nipple 20 as by a retainer 50 and has an end surface 53 that engages the spherical portion of the ball 23. There is no seal carried by and movable with the valve seat surface of the ball 23. There is an O ring seal 29 that is carried by the valve element and seals it to the valve body 12 but not on the valve seat surface. There appears to be no other seal provided except the seal 48 secured to the nipple 20. As pointed out by the Examiner, there is no disclosure in this patent of overmolding the seals in place. However, not pointed out by the Examiner, there is no seal carried by the valve element (plug) but rather only by a screw-in attachment nipple 20. Given the structure of the valve of Rakieski, the seal 48 must be secured to the nipple and not the valve element (plug) since rotation would move the seal out of engagement without any supporting surface and could be lost in the ball mount chamber of the valve. With the structure shown, the ball 23 maintains

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the seal 48 in engagement with the nipple 20. The ball 23 is mounted in a chamber with no other contact surface for the ball 23 other than that provided by the nipple 20 in combination with the seal 48. The very structure of this valve would be destroyed to make the present invention as suggested by the Examiner and as discussed below.

Grove, is a gate valve which uses a sliding gate plate 11 (plug) which in no way rotates but rather, moves linearly (vertically) in the illustrated structure between open and closed positions. The gate plate 11 has no seals carried thereby. Rather, the seals are secured to the valve body, as for example, by securement to the members 21. A seal element is provided for each side of the gate plate 11 to seal on both sides to provide a seal on both sides of the gate plate 11. It is not clear that a seal could be carried successfully by the gate 11 and provide surety of sealing or that the seal would remain mounted to the gate plate 11. Certainly, there is no disclosure of such by Grove. In fact, it appears that Grove uses undercuts as for example provided by the inclined surfaces 29 to ensure that the seal 32 remains mounted to the seal carriers 21. There is no rotary component to the operation of the valve as is defined in the claims of the instant application. Grove only discloses an entirely different type of valve. While it does disclose overmolding, it also requires that the seal carriers be machined. All valve seat surfaces are planar or flat permitting of easy and straight forward molding and subsequent machining. Machining is required and cannot be eliminated given the seal construction and the molding process of molding two seals simultaneously, at least in the disclosed structure.

Applicant notes with appreciation the Examiner's thoughtfulness in the proffered

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rejection. However, the rejection is incomplete in that it does not detail all the elements of all the claims. A detailed rejection of each claim element is required which is respectfully solicited.

As pointed out in Amendment A, there is no motivation or suggestion of overmolding a rotary type valve with a seal element molded in place in the plug. The arguments of Amendment A are reiterated herein by reference. In fact, neither reference of record discloses or suggests overmolding a seal into a rotary plug. Thus, forbidden hindsight appears to have been used in constructing the rejections. The only teaching or suggestion of this can be found in the instant application, not the cited references. Further, it would not appear that overmolding a seal into the plug of Rakieski would be feasible given the chamber that the plug element is mounted in. Even if the suggested combination from the references was made, and as the rejection is currently expressed, the claimed structure of the instant invention would not be a result. It would also appear that the seal element itself of Rakieski is meant to be replaceable given its construction. Overmolding would eliminate this possibility. Further, given the structure of Rakieski it would not be obvious to put a seal on the plug element much less an overmolded seal. For this reason alone, all the claims are in a condition for allowance over the cited references.

Because Rakieski discloses specifically a ball valve and Grove discloses a gate valve it would not be obvious to form a conical cavity in the valve body since a conical cavity would not work in either structure of the cited patents. Thus, claim 2 is not obvious over either of the cited references.

Claim 3 requires that the valve body include aluminum and that the plug element further

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include thermoplastic while the sealing ridge includes silicon rubber. A disclosure of this combination of elements cannot be found in either of the cited references and therefore, there is no basis in the cited references to support the rejection of Claim 3.

Claim 4 requires that there be one deformable sealing ridge at one end portion of the plug and a second sealing ridge mount to circumference of a second end portion of the plug. There are no seals carried in the plug portion of the valve elements of either of the cited references. Therefore, the defined structure cannot be obvious over the cited references since there is no disclosure or suggestion of such structure therein. As pointed out above, neither of the plug portions of the valves of the cited references carries a seal but rather the seal is required to be carried by the valve body or a nipple attached to the valve body.

Claim 5 provides additional details of the sealing ridges and for the same reasons expressed regarding Claim 4, Claim 5 is not obvious over the cited references.

Claim 6 provides additional detail about the sealing ridges and for the reasons expressed regarding Claims 4 and 5 for non obviousness, Claim 6 is also non-obvious over the cited references.

Claim 7 provides still further details of the sealing ridges and for the reasons expressed above regarding Claims 4, 5, and 6, there is no support in either of the cited references for the obviousness rejection over the cited references.

Claim 8 provides additional detail of the valve structure including that the plug element is conical which would be completely contrary to the teachings of the cited references. Such

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structure is contrary to having a ball valve and a gate valve. Rotation of a plug element is completely contrary to the teaching of Grove although consistent with the teaching of Rakieski. For this reason alone, Claim 8 is non-obvious.

Many of the details in Claim 8 and many details of the other Claims in this application have not been specifically addressed by the Examiner as required. Therefore, the rejections are legally deficient

Claim 9 provides additional detail of the sealing ridges and for the reasons expressed regarding Claims 4-7, Claim 9 is also non-obvious and cannot be rejected over the cited references of record.

Likewise, for the same reasons expressed regarding non-obviousness of Claims 4-7 and 9, Claim 10 is also non-obvious over the cited references of record.

Claim 11 defines the particular position of the biasing mechanism as being between the plug element and the conical cavity for the valve body. No such structure is shown in the cited references of record and therefore, they cannot support an obviousness rejection of this Claim.

For the reasons that Claim 11 is not obvious, Claim 12 is also not obvious.

Claim 13 is an independent claim and provides, similar to Claim 1, a valve body, a plug element and additionally, an array of pliable sealing ridges. For the reasons expressed regarding the patentability of Claim 1, Claim 13 is also non-obvious over the cited references. The cited references cannot support an obviousness rejection for the reasons above expressed.

Claim 14 provides additional detail of the pliable sealing ridges requiring at least one

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closely spaced paired configuration. There is no suggestion of such a construction by either Grove or Rakieski and therefore, neither patent individually or in combination can support an obviousness rejection since there is no suggestion of this construction in either patent.

Additionally, as discussed above, there is no disclosure or suggestion that the seals be carried by the plug element in either of the cited references. Such a construction would apparently destroy the functionality of the cited structures, at least over time.

Claim 15 provides additional details of the sealing ridges and as discussed above regarding Claims 4-7, 9 and 10, there is no support for a rejection of this claim in either of the cited references and that they cannot support an obviousness rejection of this claim.

Claim 16 provides additional detail of the sealing ridges and for the reasons expressed regarding Claim 15, Claim 16 is also not obvious over the cited references.

Claim 17 provides still further detail of the sealing ridge and for the reasons expressed regarding Claims 15 and 16, the rejection of Claim 17 over the two cited references cannot be supported.

Regarding Claim 18, neither reference discloses the use of a combination of thermoplastic and silicone rubber and for the reasons expressed above there is no support in the cited references to support an obviousness rejection of Claim 18.

Claim 19 provides additional detail of the sealing ridges and the conical exterior surface of the rigid support structure. There is no suggestion in either of the cited references of a conical support structure having pliable sealing ridges overmolded across a substantial portion of the

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conical exterior surface. Therefore, the cited references cannot support an obviousness rejection of Claim 19.

Claim 20 provides additional detail of a plug element by requiring undercutting portions of the rigid support structure located directly below the overmolding formed from the array of pliable sealing ridges to increase the depth of the overmolding below at least one pliable sealing ridges. There is no suggestion of a structure as defined in Claim 20 and the references of record therefore cannot support an obviousness rejection thereof.

Claim 21 provides additional details of the formation of the sealing ridges and the amount of extension of the sealing ridge above the rigid support structure. There is no suggestion of such a structure in either of the cited references. The only suggestion or teaching of such a structure are found in the instant application. Therefore, it is inappropriate and legally deficient to reject this claim over the cited references. Therefore, the cited references cannot support an obviousness rejection of Claim 21.

Claim 22 is a very detailed claim incorporating many of the limitations discussed above regarding the rejections of claims 1-21. For the reasons expressed above, it is submitted that the cited references cannot properly support an obviousness rejection of this claim.

The Examiner indicated allowable subject matter in the first Office Action. New Claims 23 and 24 are provided. Claim 23 is Claim 18 with the limitations of Claim 13 included. Claim 24 is Claim 22 with the additional limitations of Claim 12 as suggested by the Examiner.

From the foregoing, and a more complete understanding of the Rakieski and Grove

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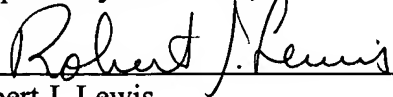
references, it is clear that the claims are in a condition for allowance. The two cited references cannot support an obviousness rejection of the instant claims. Rakieski is directed to a ball valve that carries no seal element on a plug element, Grove also has no seal element or the plug. The seals rather are carried by the valve body or an attachment to the valve body. For this reason alone, the references are legally deficient. It appears that forbidden hindsight has been utilized in the rejections since many of the claimed elements are not taught or suggested by the references.. Additionally, it is submitted that many claim elements are not specifically addressed in the rejections making the rejections legally deficient and difficult to address in this response. It is respectfully requested that the rejections of the claims in the instant application be reconsidered and withdrawn.

If any issue regarding the allowability of any of the pending claims in the present application could be readily resolved, or if other action could be taken to further advance this application such as an Examiner's amendment, or if the Examiner should have any questions regarding the present amendment, it is respectfully requested that the Examiner please telephone Applicant's undersigned attorney in this regard .

Date: _____

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Respectfully submitted,



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